UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,583	01/27/2004	Kazuhiro Koto	2635-199	9133

23117   7590   10/01/2008
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EXAMINER
DO, CHAT C

ART UNIT	PAPER NUMBER
2193	

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10/01/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/764,583	KOTO ET AL.
	Examiner	**Art Unit**	
	CHAT C. DO	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 August 2008</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,7 and 10-18</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>1,7,10-12,17 and 18</u> is/are allowed.

6)☒ Claim(s) <u>13-16</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date <u>08/01/2008</u>.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This communication is responsive to Amendment filed 08/01/2008.

2.   Claims 1, 7 and 10-18 are pending in this application. Claims 1, 13 and 17 are

independent claims. In Amendment, claims 2-6 and 8-9 are cancelled. This Office Action is

made non-final after a RCE filed 08/01/2008.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinds et al.

(U.S. Patent Publication Application No. 2004/0128331) in view of the admitted prior art.

Re claim 13, Hinds et al. discloses in Figures 1-9 a memory apparatus which

functions with a computer in an electronic control apparatus (e.g. Figures 4-5 with the

apparatus for converting integer to floating point or vice versa), said electronic control

apparatus executing on said computer calculation and control processing in accordance

with a predetermined program and having a floating-point arithmetic function (e.g. this is

a case for converting fixed-point to floating-point as see in Figure 5), and said memory

apparatus having stored therein map data which are used in floating-point calculations by

said computer (e.g. abstract and Figures 5 and 8 wherein the data map is just data), said

memory apparatus comprising: a digital store containing said data, with at least one of said set of data being expressed by fixed-point representation data (e.g. as there is a memory means for storing the input operands/data and into the conversion in Figures 5 and 8), and means for functioning with said computer to output a calculated value representing a quantity (e.g. output of Figures 5 and 8 wherein the processes of converting the input data from fixed point to the floating points are the functions of the computer and the output is the scalar value that representing a quantity), wherein said memory apparatus has stored therein, in conjunction with said data, a LSB (least significant bit) conversion value (e.g. DecLoc in pages 9-10) that is expressed in floating-point representation and represents a physical quantity value that has been predetermined as corresponding to a least significant bit of said fixed-point representation data (e.g. paragraphs [0104-0109] for converting the input data from fixed point representation form to floating point representation form wherein the input and output data both have the LSB).

Hinds et al. fail to disclose in Figures 1-9 the data is map data that comprise a set of map points and a set of map values respectively corresponding to said map points and said at least one of said set of map points and set of map values indirectly represent respective values of a physical quantity. However, the admitted prior art discloses in the background of invention pages 1-3 the data is map data that comprise a set of map points and a set of map values respectively corresponding to said map points (e.g. page 2 lines 8-12 of the original specification) and said at least one of said set of map points and set of

map values indirectly represent respective values of a physical quantity (e.g. page 2 lines 8-20 of the original specification).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add the data is map data that comprise a set of map points and a set of map values respectively corresponding to said map points and said at least one of said set of map points and set of map values indirectly represent respective values of a physical quantity as seen in the admitted prior art into Hinds et al.'s invention because it would enable to increase precision by converting the data format (e.g. general and logically seen in pages 1-2).

Re claim 14, Hinds et al. further discloses in Figures 1-9 memory apparatus has stored therein, in conjunction with said map data, an offset value that is a difference between a physical quantity value and a value that has been generated by converting said fixed-point representation data to floating-point representation data and using said LSB conversion value to operate on a result of a calculation performed on said converted floating-point representation data (e.g. paragraphs [0104-0109]).

5.   Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinds et al. (U.S. Patent Publication Application No. 2004/0128331) in view of the admitted prior art, as applied to claim 13 above, and further in view of Ford (U.S. Patent Publication Application No. 2003/0065698).

Re claim 15, Hinds et al. in view of the admitted prior art fail to disclose said

memory apparatus has stored therein, in conjunction with said map data, ID (identifier)

data indicative of a type of said fixed-point representation data. However, Ford discloses

in Figure 5 said memory apparatus has stored therein, in conjunction with said map data,

ID (identifier) data indicative of a type of said fixed-point representation data (e.g.

paragraph [0044] and component 515 in Figure 5).

Therefore, it would have been obvious to a person having ordinary skill in the art

at the time the invention is made to add said memory apparatus has stored therein, in

conjunction with said map data, ID (identifier) data indicative of a type of said fixed-

point representation data as seen in Ford's invention into Hinds et al. in view of the

admitted prior art's invention because it would enable to identify the type of operand (e.g.

paragraph [0044]).

Re claim 16, Hinds et al. in view of the admitted prior art fail to disclose said

memory apparatus has stored therein said map data with both said map points and said

map values being expressed by floating-point representation data and further has stored

therein, in conjunction with said map data, ID (identifier) data indicative of the condition

that said map points and map values are both expressed in floating-point representation

data. However, Ford discloses in Figure 5 said memory apparatus has stored therein said

map data with both said map points and said map values being expressed by floating-

point representation data (e.g. components 515 and 520 in Figure 5 and paragraph

[0044]) and further has stored therein, in conjunction with said map data, ID (identifier)

data indicative of the condition that said map points and map values are both expressed in floating-point representation data (e.g. component 525 in Figure 5).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add memory apparatus has stored therein said map data with both said map points and said map values being expressed by floating-point representation data and further has stored therein, in conjunction with said map data, ID (identifier) data indicative of the condition that said map points and map values are both expressed in floating-point representation data as seen in Ford's invention into Hinds et al. in view of the admitted prior art's invention because it would enable to optimize the operation/performance by eliminating un-necessary operation (e.g. paragraph [0044]).

Allowable Subject Matter

6.   Claims 1, 7, 10-12 and 17-18 are allowed.

Response to Arguments

7.   Applicant's arguments with respect to claims 13-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAT C. DO whose telephone number is (571)272-3721. The examiner can normally be reached on Tue-Fri 9:00AM to 7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lewis Bullock can be reached on (571) 272-3759. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chat C. Do/
Primary Examiner, Art Unit 2193

September 25, 2008